Revision 1

#5513 Store at -20C

Estrogen Receptor β Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	52, 55, 63	Rabbit	#Q92731	2100

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Estrogen Receptor β Antibody detects endogenous levels of total Estrogen Receptor β protein. This antibody is predicted to cross-react with all Estrogen Receptor β isoforms. This antibody does not cross-react with Estrogen Receptor α.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human Estrogen Receptor β1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Estrogen Receptor β (ER β) is a member of the nuclear receptor superfamily of transcription factors and was discovered to be encoded by a gene (*ESR2)* distinct from that encoding Estrogen Receptor α (ER α) (1,2). While studies have revealed that alternative splicing generates mutiple isoforms of ER β that differ at their respective C-termini and in tissue distribution, ER β1 is believed to be the longest and only fully functional isoform (3,4). Indeed, it has been reported that shorter isoforms of ER β (ER β2, β4, and β5) can heterodimerize with ER β1 and enhance its transcriptional activity in an estradiol-dependent manner (4). ER β is expressed in a wide range of normal and malignant tissues, many of which coexpress ER α. It is proposed that ER β has an antiproliferative role, perhaps through heterodimerization with ER α and repression of its transcriptional activity at estrogen response elements (5,6). Recent studies have revealed that expression of *ESR2* is subject to epigenetic regulation and that loss of ER β expression positively contributes to epithelial-mesenchymal transition and enhanced invasiveness in prostate cancer (7,8). ER β has also been found to be negatively regulated at the posttranslational level through phosphorylation of its AF-1 domain, which promotes its ubiquitin-dependent proteasomal degradation (9,10).

Background References

1. Evans, R.M. (1988) *Science* 240, 889-95.
2. Kuiper, G.G. et al. (1996) *Proc Natl Acad Sci U S A* 93, 5925-30.
3. Moore, J.T. et al. (1998) *Biochem Biophys Res Commun* 247, 75-8.
4. Leung, Y.K. et al. (2006) *Proc Natl Acad Sci U S A* 103, 13162-7.
5. Hall, J.M. and McDonnell, D.P. (1999) *Endocrinology* 140, 5566-78.
6. Pettersson, K. et al. (2000) *Oncogene* 19, 4970-8.
7. Zhu, X. et al. (2004) *Am J Pathol* 164, 2003-12.
8. Mak, P. et al. (2010) *Cancer Cell* 17, 319-32.
9. Tateishi, Y. et al. (2006) *Mol Cell Biol* 26, 7966-76.
10. Picard, N. et al. (2008) *Mol Endocrinol* 22, 317-30.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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